

CLAIMS

1. An FRP panel for an automobile comprising a panel element to which a difference in rigidity and/or a difference in strength is provided between a first FRP layer on a first surface side and a second FRP layer on a second surface side on the opposite side of the first surface.
2. The FRP panel for an automobile according to claim 1, wherein said panel element is an FRP solid plate which is formed integrally with said first FRP layer and said second FRP layer.
3. The FRP panel for an automobile according to claim 1, wherein said panel element is a panel element which has a space between said first FRP layer and said second FRP layer.
4. The FRP panel for an automobile according to claim 3, wherein a core material is disposed in said space.
5. The FRP panel for an automobile according to claim 1, wherein a plurality of panel elements are provided, and a space is formed between adjacent panel elements.
6. The FRP panel for an automobile according to claim 5, wherein a core material is disposed in said space.
7. The FRP panel for an automobile according to any of claims 1 to 6, wherein said difference in rigidity and/or said difference in strength is provided by one or two or more differences selected from the group consisting of a difference in amount of reinforcing fibers, a difference in property of reinforcing fibers and a difference in orientation of

reinforcing fibers.

8. The FRP panel for an automobile according to claim 7, wherein said difference in rigidity is provided by a condition where, with respect to a running direction of said automobile, a main orientation direction of reinforcing fibers of said first FRP layer is in a range of $\pm 20^\circ$ relative to $\pm 45^\circ$ disposition, and a main orientation direction of reinforcing fibers of said second FRP layer is in a range of $\pm 20^\circ$ relative to $0^\circ/90^\circ$ disposition.

9. The FRP panel for an automobile according to claim 3 or 4, wherein said difference in rigidity is provided by a condition where at least one surface of any one of said first and second FRP layers is formed as a surface having a concave/convex shape.

10. The FRP panel for an automobile according to claim 9, wherein said surface having a concave/convex shape has a planar shape extending almost straightly.

11. The FRP panel for an automobile according to claim 9, wherein a panel plane is sectioned in a lattice-like form into nearly rectangular areas by said concave/convex shape.

12. The FRP panel for an automobile according to claim 9, wherein a panel plane is sectioned in a lattice-like form into nearly diamond-shaped areas by said concave/convex shape.

13. The FRP panel for an automobile according to claim 9, wherein said concave/convex shape is provided along an outer circumferential shape of said FRP panel for an automobile.

14. The FRP panel for an automobile according to claim 9, wherein said concave/convex

shape is provided so as to depict a multiple closed curved line with a nearly concentric analog formation on a panel plane.

15. The FRP panel for an automobile according to any of claims 1 to 14, wherein said difference in strength is provided by introducing a discontinuous part of a reinforcing fiber substrate into at least one reinforcing fiber substrate layer of any one of said first and second FRP layers.

16. The FRP panel for an automobile according to claim 15, wherein a plurality of discontinuous parts are provided.

17. The FRP panel for an automobile according to claim 15 or 16, wherein said discontinuous part extends almost straightly.

18. The FRP panel for an automobile according to any of claims 1 or 17, wherein said difference in strength is provided by providing a high breaking elongation layer into any one of said first and second FRP layers.

19. The FRP panel for an automobile according to claim 18, wherein said high breaking elongation layer comprises a high breaking elongation resin, and said high breaking elongation resin comprises a thermoplastic resin having a low affinity in adhesion with a matrix resin of said FRP layer.

20. The FRP panel for an automobile according to claim 19, wherein said high breaking elongation layer comprises a thermoplastic resin film.

21. The FRP panel for an automobile according to claim 19, wherein said high breaking elongation layer comprises a multi-layer laminated film.

22. The FRP panel for an automobile according to claim 3 or 4, wherein said difference in rigidity and/or said difference in strength is provided by providing a difference in thickness between said first and second FRP layers.

23. The FRP panel for an automobile according to claim 4, wherein a difference in planar rigidity against external force is provided between said first and second FRP layers by providing a difference in hardness between a surface and a back surface of said core material.